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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/557,481	11/21/2005	Michael Heckmeier	MERCK-3091	2161
23599	7590	12/27/2007		
MILLEN, WHITE, ZELANO & BRANIGAN, P.C. 2200 CLARENDON BLVD. SUITE 1400 ARLINGTON, VA 22201			EXAMINER WU, SHEAN CHIU	
			ART UNIT 1795	PAPER NUMBER
			MAIL DATE 12/27/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>
	10/557,481	HECKMEIER ET AL.
	<b>Examiner</b>	<b>Art Unit</b>
	Shean C. Wu	1795

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on 26 November 2007.
- 2a) This action is FINAL.                    2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1-11 and 13-21 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 1-11, 13-18 and 21 is/are rejected.
- 7) Claim(s) 19 and 20 is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) All    b) Some \* c) None of:  
1. Certified copies of the priority documents have been received.  
2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 5) <input type="checkbox"/> Notice of Informal Patent Application |
|  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Claim Rejections - 35 USC § 112***

1. Claims 17 and 21 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The claim language “one or more compounds of formula I” is vague because they are repeated twice in the claims.

### ***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.  
(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

### ***Claim Rejections - 35 USC § 103***

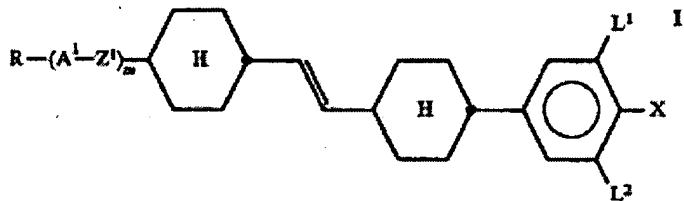
3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill

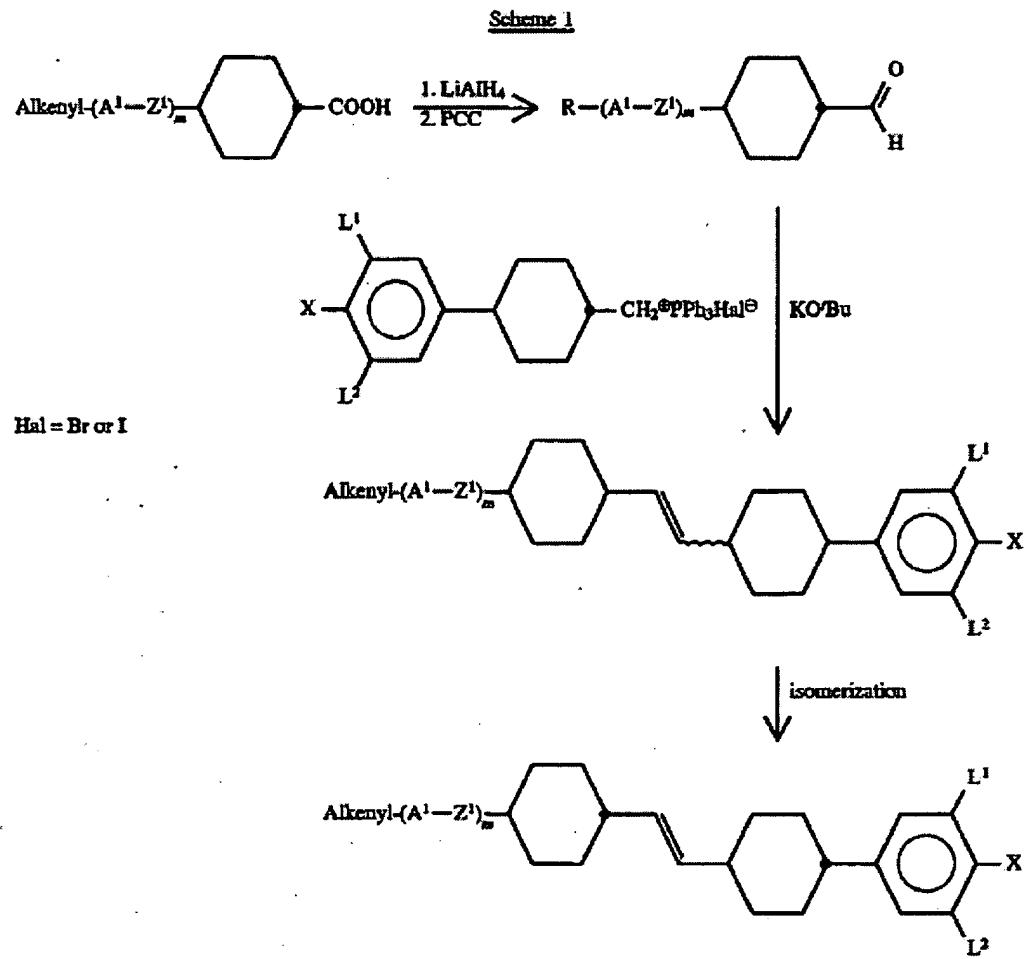
in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

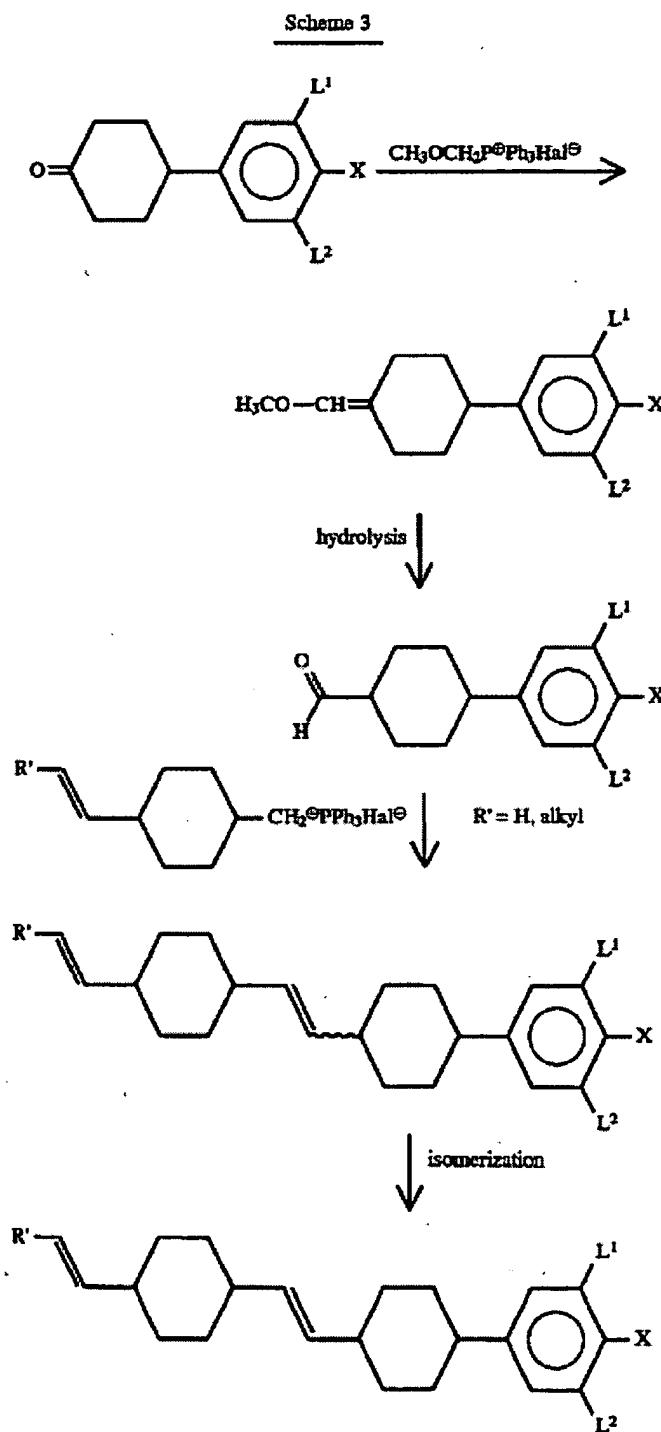
4. Claims 1-4, 6-9, 11 and 13-15 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Bartmann et al. (US 5,679,285).

The reference discloses a liquid crystal media as above are used for electro-optical applications. The reference media provide new, stable LC or mesogenic compounds represented by formula I with relatively low viscosity and high dielectric anisotropy, low viscosity, thermal and UV stability.



See the schemes 1 and 3 below





The reference compounds shown on col. 31 read on the present formula I.

CH <sub>2</sub> =CH	OCF <sub>3</sub>	F	H
CH <sub>2</sub> =CH	OCF <sub>3</sub>	F	F
CH <sub>3</sub> -CH=CH	OCF <sub>3</sub>	F	H
CH <sub>3</sub> -CH=CH	OCF <sub>3</sub>	F	F
CH <sub>2</sub> -CH=CH-CH <sub>2</sub>	OCF <sub>3</sub>	F	H
CH <sub>2</sub> -CH=CH-CH <sub>2</sub>	OCF <sub>3</sub>	F	F
CH <sub>3</sub> -CH <sub>2</sub> -CH=CH	OCF <sub>3</sub>	F	H
CH <sub>3</sub> -CH <sub>2</sub> -CH=CH	OCF <sub>3</sub>	F	F
CH <sub>3</sub> -CH=CH-CH <sub>2</sub>	OCF <sub>3</sub>	F	H
CH <sub>3</sub> -CH=CH-CH <sub>2</sub>	OCF <sub>3</sub>	F	F
CH <sub>3</sub> -CH=CH-CH <sub>2</sub>	OCF <sub>3</sub>	F	H
CH <sub>3</sub> -CH <sub>2</sub> -CH <sub>2</sub> -CH=CH	OCF <sub>3</sub>	F	H
CH <sub>3</sub> -CH <sub>2</sub> -CH <sub>2</sub> -CH=CH	OCF <sub>3</sub>	F	F
CH <sub>3</sub> -CH <sub>2</sub> -CH=CH-CH <sub>2</sub>	OCF <sub>3</sub>	F	H
CH <sub>3</sub> -CH <sub>2</sub> -CH=CH-CH <sub>2</sub>	OCF <sub>3</sub>	F	F
CH <sub>3</sub> -CH=CH-CH <sub>2</sub> -CH <sub>2</sub>	OCF <sub>3</sub>	F	H
CH <sub>3</sub> -CH=CH-CH <sub>2</sub> -CH <sub>2</sub>	OCF <sub>3</sub>	F	F
CH <sub>3</sub> -CH=CH <sub>2</sub>	OCF <sub>3</sub>	H	H
CH <sub>2</sub> -CH=CH <sub>2</sub>	OCF <sub>3</sub>	F	F
CH <sub>2</sub> =CH-CH <sub>2</sub> -CH <sub>2</sub>	OCF <sub>3</sub>	F	H
CH <sub>2</sub> =CH-CH <sub>2</sub> -CH <sub>2</sub>	OCF <sub>3</sub>	F	F
CH <sub>2</sub> =CH-CH <sub>2</sub> -CH <sub>2</sub>	OCF <sub>3</sub>	H	H

The other suitable compounds are shown from col. 12 to col. 19. The reference formulae II-VI on col. 12 read on the present formulae II-VI including the present formulae K-1 to K-3, K-10 to K-12 and K-19 to K-20 in claim 8 and formulae in claim 9.

The concentration ranges of the reference compounds are disclosed on col. 14, lines 34-40.

The reference anticipates the claimed invention. If not anticipated because the present compounds are not exemplified, it would have been obvious to those skilled in the art to follow the guidelines of the reference schemes and admix with the disclosed and known compounds to arrive at the claimed invention.

5. Claims 5 and 16-18 are rejected under 35 U.S.C. 102(b)/(e) as anticipated by Yanai et al. (US 2002/0066887 or US 6,572,938).

The reference discloses a liquid crystal composition having a high upper limit temperature of a nematic phase, a low lower limit temperature of the nematic phase and a small birefringence. The liquid crystal composition is useful for an AM-LCD device. Liquid crystal compositions are disclosed which comprise a component I comprising at least one compound selected from the group of compounds represented by formula (I-1) or (I-2), a component II comprising at least one compound selected from the group of compounds represented by formulae (II-1) to (II-8) and a component III comprising at least one compound selected from the group of compounds represented by formulae (III-1) to (III-5) as described in the specification (see pages 1 and 2). The Example 15 comprises the compounds below:

3-HEH-3	3.0%
4-HEH-3	3.0%
3-HHEH-3	3.0%
V-HHEH-3	3.0%
<u>Component II</u>	
7-HB-F	4.0%
5-HB-CL	8.0%
3-HEB-F	5.0%
3-HHB-F	5.0%
V-HHB-F	5.0%
3-HVHB (F)-F	5.0%
3-HHB (F, F)-F	8.0%
5-HHB (F, F)-F	3.0%
3-HHEB-F	5.0%
3-HHEB (F)-F	5.0%
3-HHCP2OB (F, F)-F	12.0%
5-HHCP2OB (F, F)-F	12.0%
<u>Component III</u>	
3-HH-4	5.0%
2-HH-EMe	3.0%
3-HH-EMe	3.0%

The compound of 3-HVHB(F)-F reads on the present formula I-5 and the compounds of 3-HHCF<sub>2</sub>OB(F,F)-F and 5 HHCF<sub>2</sub>O(F,F)-F read on the present formula Q-6 (claims 5 and 16-18). The reference clearly anticipates the claimed invention.

6. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bartmann et al. (US 5,679,285) as applied to claims above, and further in view of Heckmeier et al. (US 2002/0003226 or US 6,592,951).

The reference (US '285) differs from the present claim in that the claim has additional one or more compounds of formulae O1 and O2. The present compounds of O1 and O2 are known in the art (see formula Xe on col. 19 and compounds of CCOC-n-m in Examples G and H of US '951) and used in the liquid-crystalline medium based on a mixture of polar compounds having positive dielectric anisotropy, therefore, it would have been obvious to those skilled in the art to add these known compounds of US '951 into the reference (US '285) to arrive at the claimed invention.

*Allowable Subject Matter*

7. Claims 19-20 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Response to Arguments***

8. Applicant's arguments filed 11/26/07 have been fully considered but they are not persuasive. Applicant's attention is directed to the sections 3-6 cited in this Office Action. The present formula I in claim 5 encompasses the reference compound 3-HVHB(F)-F of Yanai et al. (US 2002/0066887 or US 6,572,938).

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shean C. Wu whose telephone number is 571-272-1393. The examiner can normally be reached on 9:30 AM to 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Huff can be reached on 571-272-1385. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Shean C Wu/  
Shean C Wu  
Primary Examiner  
Art Unit 1756

scw